UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/655,755	09/06/2000	Anders Eriksson	032559-071	9042

			EXAMINER
37825	7590	03/10/2004	CHANG, EDITH M

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ART UNIT	PAPER NUMBER
2634	

DATE MAILED: 03/10/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.		Applicant(s)
Office Action Summary	09/655,755		ERIKSSON, ANDERS
	Examiner		Art Unit
	Edith M Chang		2634

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _06 September 2000_.

2a)☐ This action is **FINAL**.　　2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-22_ is/are pending in the application.

　　4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1-4,6-14 and 16-22_ is/are rejected.

7)☒ Claim(s) _5 and 15_ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

　　Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

　　Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

　　a)☒ All　b)☐ Some * c)☐ None of:

　　　1.☒ Certified copies of the priority documents have been received.

　　　2.☐ Certified copies of the priority documents have been received in Application No. _____.

　　　3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
　　　　application from the International Bureau (PCT Rule 17.2(a)).

　　* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _5,6_.

4)☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2.   Claims 11 and 21 recite the limitation "the overlap-add method". There is insufficient

antecedent basis for this limitation in the claim or its parent claim.

Claim Rejections - 35 USC § 102

3.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4.   Claims 1-4, 6-14, 16-22 are rejected under 35 U.S.C. 102(e) as being anticipated by

Gustafsson et al. (US 6459914 B1).

The applied reference has a common assignee with the instant application. Based upon

the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C.

102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37

CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the

inventor of this application and is thus not the invention "by another," or by an appropriate

showing under 37 CFR 1.131.

Regarding **claims 1, 7, 13, & 17**, Gustafsson et al. discloses a digital filter design

apparatus and its method/a digital convolution apparatus and its method (FIG.3/4), including:

means for determining a real-valued discrete-frequency representation of a desired full length

digital filter (305 FIG.3/4 where $G_{M\uparrow N}$ is the discrete-frequency representation, column 6 lines

15-30 wherein the full length is presented); means for transforming the discrete-frequency

representation into a corresponding discrete-time representation (column 8 lines 16-24 wherein

the IFFT is the means for transforming the discrete-frequency); means for circularly shifting the

discrete-time representation (column 7 line 55-column 8 line 25 where the linear phase filter

performs circularly shifting); and means for applying a shortening window to the discrete-time

representation to produce a zero-padded reduced length filter or for convolving an input signal

with the zero-padded reduced length filter (325-350 FIG.3/4 is the means for applying a

shortening window and to produced a zero-padded reduced length filter, column 8 lines 18-33

where the phase filter is the shortening window, the minimum phase filter is the zero-padded

reduced length filter).

Regarding **claims 2, 8, 14 & 18**, Gustafsson et al. discloses the circularly shifting the

reduced length filter to remove leading zeroes (column 7 lines 55-67, column 11 lines 60-62, the

leading zeroes are removed).

Regarding **claim 3**, Gustafsson et al. discloses the discrete-frequency representation is

formed by a noise suppressing spectral subtraction algorithm (300 FIG.3/4, column 8 lines 58-

60).

Regarding **claim 4**, Gustafsson et al. discloses the discrete-frequency representation formed by a frequency selective non-linear algorithm for echo cancellation (column 1 lines 24-30 where the echo cancellation applied, column 2 lines 53-60 where the algorithm for the echo cancellation).

Regarding **claims 6, 9, 16 & 19**, Gustafsson et al. discloses means for transforming the reduced length filter into a minimum phase filter (column 8 lines 25-30).

Regarding **claims 10 & 20**, Gustafsson et al. discloses the convolution step in the time domain using the discrete-time representation of the reduced length filter (column 2 lines 20-25 where the convolution is used in the spectral subtraction, column 8 lines 18-25 where the convolution performs in the time domain).

Regarding **claims 11-12 & 21-22**, Gustafsson et al. discloses the convolution step in the frequency domain by using the overlap-add method (310-360 Fig.3/4).

Allowable Subject Matter

5.   Claims 5 and 15 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

6.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to Edith M Chang whose telephone number is 703-305-3416. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on 703-305-4714. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Edith Chang
February 25, 2004

CHIEH M. FAN
PRIMARY EXAMINER